AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1(Canceled).

2(Currently Amended). The ~~An isolated~~ nucleotide sequence according to claim 6, comprising ~~of~~

(a) SEQ ID NO: 1 or ~~a sequence~~

(b) the complete complement ~~complementary to the nucleotide sequence~~ of SEQ ID NO: 1.

3(Previously Presented). The nucleotide sequence according to claim 2, which is synthetically or recombinantly produced.

4(Canceled).

5(Previously Presented). The nucleotide sequence according to claim 2, which is present as a wild-type gene in normal human epidermal keratinocytes and normal human osteoblasts.

6(Currently Amended). ~~The~~ An isolated nucleotide sequence ~~according to claim 2~~ that encodes a Chfr polypeptide SEQ ID NO: 2 that delays entry of a human cell into metaphase in response to mitotic stress.

7-20 (Canceled).

21(Currently Amended). A reagent ~~useful for detecting expression of the wild-type *chf* gene or a mutation in said gene in cells, said reagent~~ consisting of a nucleic acid sequence of between 12 to 30 nucleic acids in length that ~~is identical or complementary~~ specifically hybridizes to a nucleic acid fragment of the same length from SEQ ID NO: 1 or to the complete complement of said fragment.

22(Canceled).

23(Previously Presented). The reagent according to claim 21, further comprising a detectable label.

24-42 (Canceled).

43(Previously Presented). The reagent according to claim 23, wherein said label is a fluorescent label or an enzyme.

44(Currently Amended). The reagent according to claim 21, wherein said nucleic acid fragment ~~which is complementary to the portion of SEQ ID NO: 1 that~~ encodes an amino acid fragment from within amino acids 31-103 of SEQ ID NO: 2.

45(Currently Amended). The reagent according to claim 21, wherein said nucleic acid fragment ~~which is complementary to the portion of SEQ ID NO: 1 that~~ encodes an amino acid fragment from within amino acids 303 to 346 of SEQ ID NO: 2.

46(Currently Amended). The reagent according to claim 21, wherein said nucleic acid fragment ~~which is complementary to the portion of SEQ ID NO: 1 that~~ encodes an amino acid fragment from within encodes amino acids 476 to 641 of SEQ ID NO: 2.

47(Currently Amended). The reagent according to claim 21, which is useful in a PCR assay to detect the sensitivity to killing of tumor cells in said subject to an ~~anti-mitotic drug~~ agent that disrupts microtubule function, wherein detection of ~~said~~ the absence of expression of a nucleotide sequence that encodes Chfr polypeptide SEQ ID NO: 2 ~~said *chfr* gene or said mutation in said *chfr* gene~~ is indicative of said sensitivity.

48(Currently Amended). The reagent according to claim 47, wherein said ~~anti-mitotic~~ agent is ~~the Taxol® agent~~ paclitaxel.

49(Currently Amended). A kit for detecting expression of ~~the wild-type *chfr* gene or a mutation of said *chfr* gene~~ a nucleotide sequence encoding the Chfr protein SEQ ID NO: 2 in cells, said kit comprising ~~at least one component selected from the group consisting of~~

(i) a ~~fragment of the~~ nucleotide sequence ~~of SEQ ID NO: 1~~ that is between 12 to 30 nucleotides in length, and that specifically hybridizes to a 12 to 30 nucleic acid fragment of SEQ ID NO: 1 ~~is complementary and binds to *chfr*~~; and

(ii) a ~~fragment of the~~ nucleotide sequence ~~of SEQ ID NO: 1~~ that is between 12 to 30 nucleic acids in length and that specifically hybridizes to a 12 to 30 nucleic acid fragment of the complete complement of SEQ ID NO: 1.

50(Cancelled).

51(Previously Presented). The kit according to claim 49, wherein said nucleotide fragment (i) or (ii) is attached to a detectable label.

52(Previously Presented). The kit according to claim 51, wherein said detectable label is a fluorescent compound or an enzyme.

53(Previously Presented). The kit according to claim 52, further comprising one or more components that detect said labels.

54(Currently Amended). The kit according to claim 49, further comprising a component selected from the group consisting of instructions for performing a PCR assay for the detection of the expression of a nucleotide sequence encoding Chfr polypeptide SEQ ID NO: 2, ~~said kit~~, microtiter plates to which said nucleic acid sequences have been pre-adsorbed, diluents, buffers, applicator sticks, containers, and sample preparator cups.

55(Currently Amended). The kit according to claim 49, wherein said nucleotide sequence ~~fragment~~ (i) or (ii) is synthetically or recombinantly produced.

56(Currently Amended). The kit according to claim 49, further comprising instructions for performing PCR on tumor cells of said mammal using said ~~nucleic acid sequences~~ nucleotide sequence (i) or (ii).

57(Currently Amended). The kit according to claim 49, which is useful in a PCR assay to detect the sensitivity to killing of said subject's tumor cells to an ~~anti-mitotic drug~~ agent that disrupts microtubule function, wherein detection of ~~said~~ reduced or absent expression of a nucleotide sequence that encodes Chfr polypeptide SEQ ID NO: 2 ~~said *chfr* gene or said mutation in said *chfr* gene~~ is indicative of said sensitivity.

58(New). The kit according to claim 57, wherein said ~~anti-mitotic drug~~ agent is ~~the Taxol® agent~~ paclitaxel.

Claim 59(Cancelled).

60(New). A composition comprising a pair of primer sequences, said primer sequences consisting of

(a) a nucleic acid sequence of between 12 to 50 nucleic acids in length that specifically hybridizes to a 12 to 50 nucleic acid fragment of a nucleotide sequence encoding Chfr protein SEQ ID NO: 2; and

(b) a nucleic acid sequence of between 12 to 50 nucleic acids in length that specifically hybridizes to a 12 to 50 nucleic acid fragment of the complementary strand of a nucleotide sequence encoding Chfr protein SEQ ID NO: 2.

61(New) The composition according to claim 60, wherein said nucleotide sequence encoding Chfr is SEQ ID NO: 1 or the complete complement thereof.

62(New) The composition according to claim 60, wherein said primers amplify a portion of said nucleotide sequence encoding Chfr.

63(New) The composition according to claim 62, wherein said amplified portion is selected from the group consisting of nucleotides 66-562 of SEQ ID NO: 1, nucleotides 352-1055 of SEQ ID NO: 1, nucleotides 771-1376 of SEQ ID NO: 1, nucleotides 904-1753 of SEQ ID NO: 1, nucleotides 904-1772 of SEQ ID NO: 1, nucleotides 904-1902 of SEQ ID NO: 1, nucleotides 1187-1753 of SEQ ID NO: 1, nucleotides 1187-1772 of SEQ ID NO: 1, nucleotides 1215-1753 of SEQ ID NO: 1, nucleotides 1215-1772 of SEQ ID NO: 1, nucleotides 1214-1902 of SEQ ID NO: 1, and nucleotides 1625-2279 of SEQ ID NO: 1.

64(New) The composition according to claim 62, wherein said amplified portion is selected from the group consisting of a nucleotide sequence encoding amino acids 31-103 of SEQ ID NO: 2; a nucleotide sequence encoding amino acids 303-346 of SEQ ID NO: 2; and a nucleotide sequence encoding amino acids 476-641 of SEQ ID NO: 2.

65(New) The composition according to claim 65, wherein said amplified nucleotide sequence is selected from the group consisting of nucleotides 180-399, nucleotides 557 to 1128 and nucleotides 1516-2013 of SEQ ID NO: 1.

66(New). A method for detecting the sensitivity of tumor cells to killing by an agent that disrupts microtubule function comprising using the composition of claim 61 to amplify to detectable levels a nucleotide sequence that encodes Chfr polypeptide SEQ ID NO: 2 in said cell, wherein detection of the absence of expression of said Chfr-encoding sequence is indicative of said sensitivity.